REMARKS

Rejection of Claims Under 35 U.S.C. 112, Second Paragraph

The Examiner has rejected Claims 1-10 under 35 U.S.C. 112, second paragraph, on the asserted basis that the claims are indefinite. In particular, the Examiner contends that it is not clear how an "angle" protrudes outwardly; that it is not clear what the "/" implies in "resistor/overload" device. Further, the Examiner contends that in Claims 5-6, "the sockets" inferentially claim more than one without antecedent basis. In Claim 7, the Examiner contends it is not clear if "at least one plate" is a different plate than "a plate" in Claim 1.

Applicants have amended the claims to clarify the terms found unclear by the Examiner. In particular, the term "angle" has been changed to "protrusion" and the term "positive temperature coefficient of resistance resistor/overload device" has been changed to "positive temperature coefficient of resistance resistor overload device." To correct that lack of antecedent basis for "the sockets" in Claim 5, the term "sockets" has been changed to "socket." In Claim 6, language reciting that "there are at least two sockets and at least two respectively corresponding male conductive terminal" has been added, correcting the lack of antecedent basis. In Claim 7, Applicants have clarified that "at least one plate" is "the at least one plate."

The foregoing amendments have been made for the purpose of clarifying the claims without substantive change in scope. It is respectfully submitted that the foregoing amendments overcome the Examiner's rejections on the basis of asserted indefiniteness and it is respectfully requested that these rejections be withdrawn.

Rejection of Claims Under 35 U.S.C. 102(b)

The Examiner has rejected Claims 1 and 10 under 35 U.S.C. 102(b) as being assertedly anticipated by U.S. Patent No. 5,945,903 (Reddy et al.). In particular, the Examiner contends that Reddy et al. disclose the invention at Fig. 1 and Fig. 14. The Examiner relies upon a circuit schematic in Fig. 14 for asserted disclosure of a "wire" and asserts that the "angle" (now referred to as a "protrusion" in the claims) is found in part 54 in Reddy et al. Insofar as the rejection is applicable to Claims 1 and 10, as now amended, it is respectfully traversed.

It is respectfully pointed out that no "wire" is disclosed in Fig. 14 of Reddy et al. Rather, only a conductor (of some type) on a circuit diagram is schematically disclosed. The conductor disclosed in the schematic could be, and more likely is, a trace on a printed circuit board rather than a wire. Nevertheless, in order to clarify that the "wire" of Claim 1 is a physical wire (not some other conductor, such as a trace on a circuit board), additional definition to the structure has been added, in particular, that there is "a portion of said wire extending from said plug." Clearly, the schematic in Reddy et al. does not disclose or suggest that there is "a portion of said wire extending from said plug." Instead, there is no disclosure in Reddy at al. of what form the conductor in the schematic should take or where it would be located.

In addition, as to the Examiner's assertion that the "angle" limitation (now "protrusion") is met by part 54 of Reddy et al., it is respectfully pointed out that part 54 of Reddy et al. is found on the separable part of the assembly, part 56. By contrast, in Claims 1 and 10, the protrusion is defined as "protruding outwardly from the body of the positive temperature

coefficient of resistance resistor overload device in a plane parallel to the top of the device adjacent to the socket." This structure is not disclosed in Reddy et al.

Claim 10 is dependent upon Claim 1 and adds an additional limitation. Claim 10 is submitted to be allowable for all of the reasons stated above with respect to Claim 1, even apart from its additional limitation. Accordingly, it is respectfully requested that the rejection of dependent Claim 10 be withdrawn, as well.

For the foregoing reasons, it is respectfully submitted that withdrawal of the rejections of Claims 1 and 10, as amended, under 35 U.S.C. 102(b) is in order and such is courteously solicited.

Rejection of Claims Under 35 U.S.C. 103(a)

Claims 1-6 have been rejected under 35 U.S.C. § 103(a) as being assertedly unpatentable over Admitted Prior Art Figs. 1-2 in view of Reddy et al., U.S. Patent No. 6,383,003 ("Corona"), U.S. Patent No. 6,325,656 ("Fukuda") or U.S. Patent No. 4,925,398 ("Samejima"). Claims 1 and 3-6 have been rejected under 35 U.S.C. § 103(a) as being assertedly unpatentable over U.S. Patent No. 3,914,727 ("Fabricus") in view of Corona, Fukuda or Samejima. Claims 1 and 7-9 have been rejected under 35 U.S.C. § 103(a) as being assertedly unpatentable over U.S. Patent No. 5,949,324 ("Segler") in view of Corona, Fukuda or Samejima. Insofar as these rejections may be applied against the claims as amended, they are respectfully traversed.

It is respectfully submitted that the structure defined in independent Claim 1 is neither disclosed nor suggested by the Admitted Prior Art Figs. 1-2, Reddy et al. Fabricus, Corona, Fukuda, Samejima or Segler. In particular, in the Admitted Prior Art Figs. 1-2, Fabricus and

Segler, there is no disclosure of the female plug, as the Examiner acknowledges. The deficiencies of Reddy et al. have already been discussed above. Fabricus teaches configuring the electrical connections on a positive-temperature-coefficient resistor package as exposed male leads 57 and 58 and has no disclosure or suggestion of a "female conductive element connected to each wire and within said plug, a portion of said wire extending from said plug," that the positive temperature coefficient of resistance resistor overload device has "a body having a socket therein" or a "protrusion protruding outwardly from the body of the positive temperature coefficient of resistance resistor overload device in a plane parallel to the top of the device adjacent to the socket." Segler also has no disclosure or suggestion of a "female conductive element connected to each wire and within said plug, a portion of said wire extending from said plug," that the positive temperature coefficient of resistance resistor overload device has "a body having a socket therein" or a "protrusion protruding outwardly from the body of the positive temperature coefficient of resistance resistor overload device in a plane parallel to the top of the device adjacent to the socket."

These deficiencies are not supplied by the secondary references Corona, Fukuda or Samejima. Corona discloses an environmentally sealed connector having wired connections a tboth ends. There is no disclosure or suggestion of its use on positive temperature coefficient of resistance resistor overload assemblies. Fukuda discloses a lock structure for locking male and female connector halves and also does not suggest that such a lock structure should be employed on positive temperature coefficient of resistance resistor overload assemblies, particularly those having "a body having a socket therein." Similarly, Samejima discloses a connector having a

locking structure, but also has no disclosure or suggestion of use of the connection on positive temperature coefficient of resistance resistor overload assemblies, particularly one having "a body having a socket therein."

In the field of positive temperature coefficient of resistance resistor overload (PTCR/OL) assemblies, it is desirable to simplify the manufacture of these assemblies and their installation on the equipment of which they comprise a part. Because the equipment in which PTCR/OL assemblies are used is often bulky and heavy, it may be difficult to install the PTCR/OL assembly onto the equipment during manufacture due to size and location restraints. Similarly, removing a failed PTCR/OL assembly and installing a new assembly in situ is often hampered by equipment size and location and the position of the PTCR/OL assembly on the equipment. Thus, the need arose for PTCR/OL assemblies that could be easily installed during equipment manufacture, and easily replaced in situ in the event of a failure.

Because the equipment on which PTCR/OL assemblies are used tend to be subject to vibration, designs have evolved that ensure the assemblies remain securely attached to the equipment, and that connection mechanisms remain securely connected during use, and will not vibrate loose over time. For electrical connections, there is a dual need of making a connection that will remain secure, and keeping electrical connections sufficiently isolated to prevent undesirable contact or short-circuit during operation due to equipment vibration. In order to achieve these operational objectives of ensuring secure connections and proper electrical contact, the electrical connection mechanisms designed are often difficult to install, remove, or reconnect when assembling or replacing the PTCR/OL assembly, and may require the use of special tools.

The conventional approach to reducing costs and/or increasing reliability would be to reduce the number of separate parts that must remain connected, which would tend to minimize the vibrating mass as well as the potential failure points. However, contrary to this conventional wisdom, the Applicants have interposed an "electrically isolated plug comprising at least one female wire receptacle for receiving the wire," and a "female conductive element connected to each wire and within said plug, a portion of said wire extending from said plug" and a "protrusion protruding outwardly from the body of the positive temperature coefficient of resistance resistor overload device in a plane parallel to the top of the device adjacent to the socket." Surprisingly, this structure, despite having additional parts, is simpler to manufacture and maintain, and has improved reliability.

In view of the foregoing, it is respectfully submitted that none of the prior art teaches or suggests a positive temperature coefficient of resistance resistor overload assembly having the features defined in Claim 1, as amended, including an "electrically isolated plug comprising at least one female wire receptacle for receiving the wire," a "female conductive element connected to each wire and within said plug, a portion of said wire extending from said plug," that the positive temperature coefficient of resistance resistor overload device has "a body having a socket therein" and a "protrusion protruding outwardly from the body of the positive temperature coefficient of resistance resistor overload device in a plane parallel to the top of the device adjacent to the socket." Accordingly, for the foregoing reasons, it is respectfully submitted that the invention defined by Claim 1 would not have been obvious and withdrawal of the rejection of Claim 1 on this basis is believed in order and is courteously solicited.

With respect to Claims 2-10, these claims are dependent upon Claim 1, directly or indirectly, and add additional limitations beyond those recited in Claim 1. Claims 2-10 are submitted to be allowable for all of the reasons stated above with respect to Claim 1, in addition to those additional limitations. Accordingly, it is respectfully requested that the rejections of dependent Claims 2-10 be withdrawn, as well.

Since all claims are now believed to be in condition for allowance, it is respectfully submitted that a Notice of Allowance be issued for all pending Claims 1-10 and such is courteously requested.

Applicants hereby submit the fee of $110.00 for a one month extension of time. Applicants do not believe any other fees are due with this correspondence; however, in the event that any fees are due, the Commissioner is hereby authorized to charge any required fees due (other than issue fees), and to credit any overpayment made, in connection with the filing of this paper to Deposit Account No. 50-0605 of Carr Law Firm, L.L.P.

Should the Examiner have any questions or desire clarification of any sort, or deem that

any further amendment is desirable to place this application in condition for allowance, the Examiner is invited to telephone the undersigned at the number listed below.

Respectfully submitted,

Dated: March 24, 2003

Theodore F. Shiells
Reg. No. 31,569
CARR LAW FIRM, L.L.P.
670 Founders Square
900 Jackson Street
Dallas, Texas 75202
Telephone: (214) 760-3032
Fax: (214) 760-3003

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows, noting that all pending, non-withdrawn claims are included herein for the convenience and efficiency of examination, and that only those claims so indicated as amended are being amended herein:

1. (Amended) A positive temperature coefficient of resistance ~~resistor/overload~~ resistor overload assembly comprising:

at least one wire capable of conducting electrical current;

at least one electrically isolated plug comprising at least one female wire receptacle for receiving the wire, and a female conductive element connected to each wire and within said plug, a portion of said wire extending from said plug;

a positive temperature coefficient of resistance ~~resistor/overload~~ resistor overload device having a body having a socket therein, comprising:

at least one male conductive terminal in ~~a~~ the socket of said body for receiving the corresponding female conductive element on the electrically isolated plug;

a plate made of a conductive material attached to each male conductive terminal; and ~~an~~ ~~angle~~ a protrusion protruding outwardly from the body of the positive temperature coefficient of resistance ~~resistor/overload~~ resistor overload device in a plane parallel to the top of the device adjacent to the socket.

2. (Amended) The assembly of Claim 1 further comprising a capacitor having at least one male connector and at least one female receptacle on the positive temperature

coefficient of resistance ~~resistor/overload~~ resistor overload device for receiving the at least one male connector of the capacitor.

3. (Amended) The assembly of Claim 1 wherein the electrically isolated plug further comprises a flexible arm with a locking tab of a size and shape such that the upper surface of the locking tab can be retainingly secured against the underside of the ~~angle~~ protrusion on the body of the positive temperature coefficient of resistance ~~resistor/overload~~ resistor overload device.

4. (Amended) The assembly of Claim 3 wherein the flexible arm can be flexed so as to release the locking tab from pressing up against the underside of the ~~angle~~ protrusion.

5. (Amended) The assembly of Claim 1 wherein the ~~sockets~~ socket on the positive temperature coefficient of resistance ~~resistor/overload~~ resistor overload device ~~are~~ is electrically isolated from adjoining conductive parts.

6. (Amended) The assembly of Claim 1 wherein there are at least two sockets and at least two respectively corresponding male conductive terminals, the sockets on the positive temperature coefficient of resistance ~~resistor/overload~~ resistor overload device ~~are~~ being of a different size to facilitate connection of the isolated plug to the correct male conductive terminal.

7. (Amended) The assembly of Claim 1 wherein the male conductive terminal is secured to the at least one plate by means of adhesive bonding.

8. (Amended) The assembly of Claim 1 wherein the male conductive terminal is secured to the at least one plate by means of welding.

9. (Amended) The assembly of Claim 1 wherein the male conductive terminal is secured to the at least one plate by means of soldering.

10. (Amended) The assembly of Claim 1 wherein at least one male conductive terminal is cuttingly removed from the at least one plate.

11-21. (Withdrawn)